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(54) MONOMOLECULAR FILM OF OLIGONUCLEOTIDE

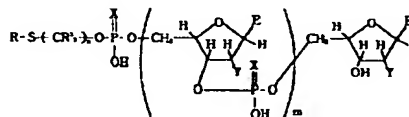
(57) Abstract:

PURPOSE: To provide the monomolecular film useful as functional materials such as DNA sensor, a material for molecular element, etc., by bonding a compound having an oligonucleotide structure through sulfur atom to the surface of a metal substrate.

CONSTITUTION: A compound having an oligonucleotide structure is bonded through sulfur atom to the surface of a metal substrate to give the monomolecular film formed on the surface of the metal substrate. The monomolecular film is preferably obtained by dis-

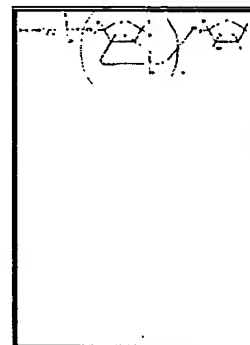
solving an oligonucleotide of the formula (R is H or a thiol-protecting group; R¹ is H or a 1-3C alkyl; E is a nucleic acid salt base; X is S or O; Y is H or OH; (m) is 1-20; (n) is 8 or more) in a solvent such as ethanol, adding an acid such as dichloroacetic acid to the solution, eliminating the protecting group of thiol, then taking out thiol and immersing a substrate having a heavy metal surface such as Au at 10-50°C for one hour to 3 days.

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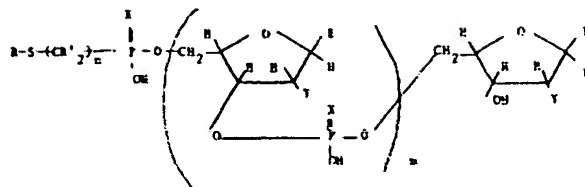
DELPHION**RESEARCH**[Log Out](#)[Work Files](#)[Saved Searches](#)[My Account](#)Search: [Quick/Number](#) [Boolean](#) [Advanced](#) [Der](#)**Derwent Record**[En](#)View: [Expand Details](#) Go to: [Delphion Integrated View](#)Tools: [Add to Work File](#); [Create new Wor](#)Derwent Title: **Oligo-nucleotide monolayer attached to metal surface through sulphur bonds - used for DNA sensor and molecular elements**Original Title: ☒ [JP06041183A2](#): MONOMOLECULAR FILM OF OLIGONUCLEOTIDEAssignee: **mitsubishi kasei corp** Standard company
Other publications from [mitsubishi kasei corp](#) (MITU)...Inventor: **None**Accession/ **1994-089329 / 199411**

Update:

IPC Code: **C07H 21/04 ; C07H 21/02 ; C12Q 1/68 ;**Derwent Classes: **B04; D16; E11; J04; B02; B03;**Manual Codes: **B04-B03B(Nucleotides) , B04-B03C(Oligonucleotides) , B04-E01(Nucleic acid general and other) , B05-A03B(Other transition metals, lanthanides - metals and compounds) , B12-K04A(Diagnosis of diseases or conditions in animals general) , D05-C05(Nucleotides by fermentation) , D05-H09 (Testing and detection [exc. bacteria, fungi, viruses]) , D05-H10(Fixing biological substances or cells to a carrier and the carriers themselves) , E05-G07(P-O or P-S bond, heterocyclic compound) , J04-B01(Analytical methods/equipment [general])**Derwent Abstract: ([JP06041183A](#)) An oligonucleotide monolayer formed on the surface of a metal substrate combined to the surface of the metal substrate through sulphur atom. The oligonucleotide is of formula (I). Where, R = H or protective gp. for thiol; R1 = H or 1-3C alkyl; E = nucleic acid base; X = S or O; Y = H or OH; m = 1 to 20; and n = 8 or more.**USE/Advantage** - The monolayer is useful as a material for DNA sensors and molecular elements.In an example, 246 mg of H-S-(CH₂)₁₁OH (IIIa), 355 g of cpd. CIP(N(C₃H₇(i))₂O(CH₂)₂CN (IV), and 386 mg diisopropylamine were dissolved in 8ml methylene chloride and reacted at 20 to 25 deg.C for 1 hr.. The reaction liquor was extracted with ethyl acetate. The extract was fed to a silica gel column and eluted to give 397 mg of the cpd. H-S-(CH₂)₁₁-O-P(N(C₃H₇(i))₂O(CH₂)₂CN (Va).

The cpd. (Va) was subjected to 3 different steps to give the cpd. (I). A monolayer of 19 A thick was prepd. on an Au-lined Cr-silicon wafer from it.

Images:



Dwg.0/0

Family: **PDF Patent** **Pub. Date** **Derwent Update** **Pages** **Language** **IPC Code**
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Priority Number:

Application Number	Filed	Original Title
<u>JP1992000196819</u>	1992-07-23	MONOMOLECULAR FILM OF OLIGONUCLEOTIDE

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Title Terms: OLIGO NUCLEOTIDE MONOLAYER ATTACH METAL SURFACE THROUGH SULPHUR BOND DNA SENSE MOLECULAR ELEMENT

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